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10/019,172	02/28/2002	James Leonard Austin	STAN 2388	1340

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EXAMINER

MAHMOUDI, HASSAN

ART UNIT PAPER NUMBER

2175

DATE MAILED: 10/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/019,172

Applicant(s)

AUSTIN, JAMES LEONARD

Examiner

Tony Mahmoudi

Art Unit

2175

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,2,17,18 and 23-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,17, 23-28, and 34 is/are rejected.
- 7) ☒ Claim(s) 18 and 29-33 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

  
**SAM RIMELL**  
**PRIMARY EXAMINER**

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date Z.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The specification is objected to because the arrangement of the disclosed application does not conform with 37 CFR 1.77(b).

Section headings are missing throughout the disclosed specification. Specification should have appropriate headings as provided by the guidelines provided below. Appropriate corrections are required according to the guidelines provided below:

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

#### Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC (See 37 CFR 1.52(e)(5) and MPEP 608.05. Computer program listings (37 CFR 1.96(c)), "Sequence Listings" (37 CFR 1.821(c)), and tables having more than 50 pages of text are permitted to be submitted on compact discs.) or  
REFERENCE TO A "MICROFICHE APPENDIX" (See MPEP § 608.05(a). "Microfiche Appendices" were accepted by the Office until March 1, 2001.)
- (e) BACKGROUND OF THE INVENTION.
  - (1) Field of the Invention.
  - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.

Art Unit: 2175

- (f) BRIEF SUMMARY OF THE INVENTION.
- (g) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (h) DETAILED DESCRIPTION OF THE INVENTION.
- (i) CLAIM OR CLAIMS (commencing on a separate sheet).
- (j) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (k) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

### *Abstract*

3. The abstract of the disclosure is objected to because it contains legal phraseology such as "means" in lines 1 and 8. Correction is required.
4. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. **The form and legal phraseology often used in patent claims, such as "means" and "aid," should be avoided.** The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details. See MPEP §608.01(b).

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc. See MPEP §608.01(b).

### *Claim Objections*

5. Claims 30-33 are objected to because of the following informalities:

The preamble of claim 30 contains two colons ":", in lines 7 and 8. Preamble of a claim should only end with a colon ":". Correction is required.

Claims 31-33 are objected to because they are dependents from the objected to dependent claim 30.

*Claim Rejections - 35 USC § 102*

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-2, 17, 23-28, and 34 are rejected under 35 U.S.C. 102(e) as being anticipated by Steeg (U.S. Patent No. 6,493,637.)

As to claim 1, Steeg teaches a data processor (see Abstract) comprising:

a) a correlation matrix memory, arranged to store data (see column 9, lines 11-60, and see column 28, lines 37-49);

b) input means arranged to receive sets of input data to be stored in the correlation matrix memory (see column 9, lines 56-60);

c) a sampler arranged to derive, from each set of input data, a respective set of tuples (see column 1, lines 13-17, see column 33, lines 32-53);

Art Unit: 2175

d) a coder arranged to code each of the tuples (see column 23, lines 29-34, and see column 33, lines 32-53);

e) a combiner arranged to combine the coded tuples for a respective set of input data (see column 3, line 66 through column 4, line 61, and see column 27, lines 37-60);

f) a separator generator arranged to generate for each set of input data a respective, associated, unique separator (see column 27, lines 37-60, and see column 42, lines 49-67);

g) storage means arranged to store the association of each separator with its respective set of input data (see column 9, lines 42-60, and see column 22, lines 19-37); and

h) addressing means arranged to applying to the correlation matrix memory, for each set of input data, the respective combined coded tuples as a row address and the respective unique separator as a column address, or vice-versa (see column 23, lines 29-38, and see column 26, lines 14-27.)

As to claim 2, Steeg teaches wherein the combined coded tuples for each set of input data (see column 3, line 66 through column 4, line 61, and see column 27, lines 37-60) are in the form of a binary coded word (see column 33, lines 32-53); the data processor further comprises a translator arranged to translate each such binary coded word into a translated word comprising index values representing which bits of the binary coded word are set (see column 17, lines 18-34); and the addressing means (see column 23, lines 29-38, and see column 26, lines 14-27) is arranged to apply the translated word to the correlation matrix memory (see column 22, lines 19-37.)

Art Unit: 2175

As to claim 17, Steeg teaches a method of processing data (see Abstract), comprising the steps of:

- a) receiving sets of input data (see column 9, lines 56-60) to be stored in a correlation matrix memory (see column 9, lines 11-60, and see column 28, lines 37-49);
- b) deriving, from each set of input data, a respective set of tuples (see column 1, lines 13-17, see column 33, lines 32-53);
- c) coding each of the tuples (see column 23, lines 29-34, and see column 33, lines 32-53);
- d) combining the coded tuples for a respective set of input data (see column 3, line 66 through column 4, line 61, and see column 27, lines 37-60);
- e) generating for each set of input data a respective, associated, unique separator (see column 27, lines 37-60, and see column 42, lines 49-67);
- f) storing the association of each separator with its respective set of input data (see column 9, lines 42-60, and see column 22, lines 19-37); and
- g) applying to the correlation matrix memory, for each set of input data, the respective combined coded tuples as a row address and the respective unique separator, as a column address, or vice-versa (see column 23, lines 29-38, and see column 26, lines 14-27.)

As to claim 23, Steeg teaches wherein the separator generator is arranged to generate separators in a random manner (see column 18, lines 38-45, and see column 27, lines 37-60.)

Art Unit: 2175

As to claim 24, Steeg teaches wherein the separator generator is arranged to generate separators which are M bits wide and having N bits set, where  $N > 1$  or  $N = 1$ , and where  $N < M$  (see column 29, lines 18-43, and see column 31, line 60 through column 32, line 26.)

As to claim 25, Steeg teaches wherein, for each the set of tuples, each tuple comprises three successive elements of a respective set of input data, and each successive tuple is offset by one such element from the preceding tuple (see figure 5b, and see column 23, lines 11-28.)

As to claim 26, Steeg teaches wherein the coder is arranged to code the tuples by tensoring (see column 22, line 19 through column 23, line 38, and see column 31, line 60 through column 32, line 26, where "tensoring" is read on "vectors".)

As to claim 27, Steeg teaches wherein the combiner is arranged to combine the coded tuples for a respective set of input data, by superimposition (see column 35, lines 36-55.)

As to claim 28, Steeg teaches wherein at least some of the rows (or columns) of the correlation matrix memory are represented by binary words, each of which represents the positions of each bit in the respective row (or columns) which is set (see column 34, lines 45-56, and see column 35, lines 36-55.)



Art Unit: 2175

As to claim 34, Steeg teaches the data processor arranged to process sets of input data and query data in the form of postal addresses (see column 53, line 35 through column 54, line 11.)

*Allowable Subject Matter*

8. Claims 18 and 29-33 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record, Steeg (U.S. Patent No. 6,493,637) and Oates et al (U.S. Publication No. 2003/0191887 A1), do not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim):

outputting a raw superimposed separator which represents, for a respective set of query data, the number of rows (or columns) having a bit set by the applied combined coded tuples in each column (or row) represented by the raw superimposed separator;

converting the raw superimposed separator into a binary superimposed separator;

extracting one or more individual separator from the binary superimposed separator; and

identifying the or each respective original set of input data from association with the or each individual separator extracted from the binary superimposed separator, as claimed in claim 18.

The prior art of record, Steeg (U.S. Patent No. 6,493,637) and Oates et al (U.S. Publication No. 2003/0191887 A1), do not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim):

the addressing means is arranged to access a first one of the sub-correlation matrix memories and apply the combined coded tuples of a respective set of input data to that sub correlation matrix memory unless a respective row (or column) of that sub-correlation matrix memory will become saturated by application of those tuples; and in the event of such prospective saturation, access successive ones of the sub-correlation matrix memories until those tuples can be applied to a respective one of the sub-correlation matrix memories without such saturation, as claimed in claim 29.

The prior art of record, Steeg (U.S. Patent No. 6,493,637) and Oates et al (U.S. Publication No. 2003/0191887 A1), do not disclose, teach, or suggest the claimed limitations of (in combination with all other features in the claim):

output means for outputting a raw superimposed separator which represents, for a respective set of query data, the number of rows (or columns) having a bit set by the applied combined coded tuples in each column (or row) represented by the raw superimposed separator;

threshold means arranged to convert the raw superimposed separator into a binary superimposed separator; and

Art Unit: 2175

an extractor arranged to extract individual separators from the binary superimposed separator, as claimed in claim 30.

Claims 31-33 are objected to because they are dependents from the objected to dependent claim 30.

### *Conclusion*

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patent(s) is/are cited to further show the state of art with respect to methods and systems of processing data in correlated matrix memories in general:


Patent/Pub. No.	Issued to	Cited for teaching
US 20030191887A1	Oates et al.	Correlated Matrix Memory Storage and Access.

11. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Tony Mahmoudi whose telephone number is (703) 305-4887. The examiner can normally be reached on Mondays-Fridays from 08:00 am to 04:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici, can be reached at (703) 305-3830.

tm

September 23, 2004



**SAM RIMELL**  
PRIMARY EXAMINER